



US 20090256208A1

(19) **United States**(12) **Patent Application Publication**  
**Okano**(10) **Pub. No.: US 2009/0256208 A1**(43) **Pub. Date: Oct. 15, 2009**(54) **SEMICONDUCTOR DEVICE AND METHOD  
OF FABRICATING THE SAME****Publication Classification**(75) Inventor: **Kimitoshi Okano**, Kanagawa (JP)(51) **Int. Cl.**  
**H01L 29/78** (2006.01)  
**H01L 21/762** (2006.01)

Correspondence Address:

**OBLON, SPIVAK, MCCLELLAND MAIER &  
NEUSTADT, L.L.P.**  
**1940 DUKE STREET**  
**ALEXANDRIA, VA 22314 (US)**(52) **U.S. Cl. .... 257/365; 438/585; 257/E29.264;  
257/E21.545**(73) Assignee: **KABUSHIKI KAISHA  
TOSHIBA**, Tokyo (JP)(57) **ABSTRACT**(21) Appl. No.: **12/421,143**

A method of fabricating a semiconductor device according to one embodiment includes: forming a fin and a film on a semiconductor substrate, the film being located at least either on the fin or under the fin and on the semiconductor substrate; forming a gate electrode so as to sandwich both side faces of the fin via a gate insulating film; and expanding or shrinking the film, thereby generating a strain in a height direction of the fin in a channel region.

(22) Filed: **Apr. 9, 2009**(30) **Foreign Application Priority Data**

Apr. 11, 2008 (JP) ..... 2008-103850

